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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,045	01/15/2002	Ziv Z. Hellman	3394p007x2	3464

55890	7590	05/03/2006

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ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/25/06*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-136,138 and 139* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-136,138 and 139* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/25/2006*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the response filed 1/25/2006.

As indicated in the response, claims 1, 8, 10, 12, 14, 28, 30, 34-35, 37, 40-41, 58-59, 61-

62, 70, 102-103, 109, and 135 have been amended, and claims 137, 140 canceled.

Claims 1-136, 138-139 have been submitted for examination.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new
> and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claim 102 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter.

> The Federal Circuit has recently applied the practical application test in determining whether the claimed subject matter
> is statutory under 35 U.S.C. § 101. The practical application test requires that a " useful, concrete, and tangible result"
> be accomplished. An "abstract idea" when practically applied is eligible for a patent. As a consequence, an invention,
> which is eligible for patenting under 35 U.S.C. § 101, is in the "useful arts" when it is a machine, manufacture, process
> or composition of matter, which produces a concrete, tangible, and useful result. The test for practical application is
> thus to determine whether the claimed invention produces a "useful, concrete and tangible result".

As per claim 102, this claim also recites a system comprising a receiver for receiving a

schema --the schema defining data on a computer media --and a builder for building an ontology

model to embed schema data therein. As from the specifications (e.g. Fig. 2-4), the *receiver* and

the *builder* being recited appear to be software entities having some functionality but the claim

lacks teaching on a tangible hardware support in order to carry out such functionality. The mere

fact that a schema is defining data on a computer readable media does not necessarily teach that

an action is taken via execution by a tangible executing engine (or hardware embodiment

thereof) so to produce a result; or that such tangible execution engine does exist for such *defining*

(or receiving) action to be carried out. Besides, the Specifications does not contain a single

passage describing that a computer readable media is interacting with a (source/target) schema,

nor does it relate the existence of a computer tangible media having data being defined by a

schema. Absent a reasonable teaching of hardware support that would reasonably convey the

realization of a tangible result, the claim fails to fulfill a Practical Application Test, is hence

rejected for leading to non-statutory subject matter.

Dependent claims 103-109, and 122-126 are also rejected for not remedying to the

deficiencies of the base claims.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and
> using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or
> with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the
> inventor of carrying out his invention.

5.   Claims 1, 70 and 102 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention.

The element recited as '...schema defining data on a computer readable media' is not

supported by any explicit description in the specification (cl. 1, li 5; cl. 70, li. 3; cl. 102, li. 3).

The specifications does not contain a single passage describing that a computer readable media is

associated with data being defined by a received (source/target) schema, nor does it relate the

existence of a computer tangible media in which data is being defined by a schema. It is

disclosed computer program being embodied in a computer readable media to carry out the

ontology model building of the invention whereby a schema can be embedded in the model

(Specifications, pg. 8) but there is no teaching about data schema defining data on such computer

media; or receiving (source/target) schema on such media. One skill in the art would not be able

to construe how *receiving* a schema would be implemented so to have *data schema defining data*

on a computer readable media when there is no description in the disclosure to reasonably

convey that the Applicant or inventor had possession of this *receiving/defining* combined

limitation. This limitation would be treated as just data schema being embodied in any standard

format, or file/repository system readable by a computer entity or any processing unit that can

process/retrieve the data.

Dependent claims 2-33, 71-101, 103-134 are also rejected for not remedying to the

deficiencies of the base claims.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7.   Claims 1-8, 20, 24, 26-41, 70-71, 135-136, and 138-139 are rejected under 35

U.S.C. 102(e) as being anticipated by Wachtel, USPN: 6,847,947 (hereinafter Wachtel).

As per claim 1, Wachtel discloses a method for deriving transformations for

transforming data from one data schema to another, comprising:

receiving a source data schema (e.g. Fig. 14) and a target data schema (e.g. Fig. 17 –

Note: receiving a XML message in order to process it again reads on receiving a target schema –

see col. 15, lines 1-29), the source data being different from the target data, each schema having

definition data readable from or stored on a computer media (Note: samples of schemas in Fig.

14, 17 depicts distinct forms of XML being readable from a computer media);

mapping the source data schema into an ontology model; mapping the target data schema

into the ontology model (e.g. Fig. 6-9; *xml, workflow, map* – col. 5, line 62 to col. 7, line 14 -

Note: XML information/metadata when parsed by XPATH into a tree reads on a schema of

definition); and

automatically deriving a transformation (e.g. Fig. 8-9, col. 12, line 51 to col. 13, line 26

– Note: *Intelligent data assimilation system* reads on automatic derivation) for transforming data

conforming to the source data schema into data conforming to the target data schema (e.g. Fig. 6-

9; Fig. 17-18 – Note: output response based on mapping against ontology metastore based on

service and output requests – Fig. 14, 17 -- reads on source data schema in request conforming

to target schema), using the ontology model;

wherein the transformation transforms data conforming to source schema directly to data

conforming target schema (Note: using abstracted concepts stored in the model and invoking

one or more pre-stored templates to instantiate a workflow – see col. 5, line 46 to col. 7, line 14 -

- to include intelligence enabling the transforming into a target schema reads on data schema

from the request --i.e. source schema -- directly converted into output schema without any

intermediate data schema format; Fig. 10, step 516, 518; Fig 6 and related text).

As per claim 2, see ontology (col. 5, line 62→ col. 7, line 14).

As per claim 3, see ontology (e.g. *runtime ...populated* - col. 7, lines 23-65; Fig. 4).

As per claim 4, see Wachtel for external format (e.g *xml document*– col. 7, lines 4-22)

into internal format (e.g. *atomic semantic instances* - Fig. 4).

As per claim 5, see generating model instances (*runtime ...populated* - col. 7, lines 23-

65; Fig. 4)

As per claim 6, Wachtel discloses initial model (e.g. *data fields* – col. 9, lines 40-44;

col. 13, lines 1-26) being populated into runtime (ontology workflow model) with abstraction

instances based on LSO mapping (Fig. 6-9; col. 14, line 60 to col. 15, line 41)

As per claim 7, refer to claim 4.

As per claim 8, Wachtel discloses code for transforming data conforming to the source

data schema into data conforming to the target data schema (e.g. Fig. 6-9; Fig. 17-18; col. 6, line

20 to col. 7, line 14 – Note: developers configuring workflows via dynamic manipulation with

encapsulation of objects therein and underlying XSL code supporting the formatting of output

response based on service – Fig. 14, 17 -- reads on generating executable code to support

transformation source data schema in request conforming to target schema-- see: XSL - col. 25,

lines 41-47).

As per claim 20 Wachtel discloses that the source data schema is a source document

schema describing source documents (e.g. Fig. 14), and wherein the target data schema is a

target document schema describing target documents (e.g. Fig. 17-18 – Note: XML schema reads

on describing target documents being defined by such schema).

As per claim 24, Wachtel discloses wherein the source document schema is a source

XML schema describing source XML documents, wherein the target document schema is a

target XML schema describing target XML documents, and wherein the source XML schema

and the target XML schema each describes at least one XML complexType having at least one

XML element or XML attribute (e.g. Fig. 14, 18 – Note: type as defined in a corresponding DTD

having at least one XML element or XML attribute reads on complexType).

As per claim 26, Wachtel discloses XSLT script (col. 7, lines 10-14).

As per claim 27, Wachtel discloses that said mapping a source data schema and said

mapping a target data schema each comprise: identifying at least one class in the ontology model

corresponding to at least one XML complexType; and identifying at least one property or

composition of properties in the ontology model corresponding to at least one XML element or

XML attribute (*class* – col. 11, lines 45 to col. 12, line 19; Fig. 4-7).

As per claim 28, Wachtel discloses that automatically deriving further comprises

expressing XML elements and XML attributes of the target XML schema in terms of XML

elements and XML attributes of the source XML schema (e.g. Fig. 6-9; Fig. 17-18 – Note: output

response based on mapping against ontology metastore based on service and output requests –

Fig. 14, 17 -- reads on source data schema in request conforming to target schema, i.e.

expressing elements required from source XML in terms of elements in the output XML).

As per claim 29 Wachtel discloses said expressing is performed recursively through

XPath paths (Note: parsing a XML schema according to W3C standard requires a Xpath and a

DOM tree traversal; hence the Xpath recursive traversal is disclosed).

As per claim 30, Wachtel discloses wherein at least one dependency exists among

properties in the ontology model, and wherein said deriving further comprises translating the at

least one dependency among properties in the ontology model as at least one dependency

between target XML elements and source XML elements (e.g. Fig. 3, 4, 5, 7, 17).

As per claim 31, Wachtel discloses applying the XSLT script to at least one source XML

document to generate at least one target XML document (re claim 26).

As per claims 32 and 33, Wachtel discloses single (Fig. 1) or multiple databases (Fig. 8).

As per claim 34, Wachtel discloses a system for deriving transformations for

transforming data from one data schema to another, comprising:

a schema receiver receiving a source data schema and a target data schema (e.g. Fig. 14;

Fig. 17 - Note: sub-workflow receiving a XML message in order to process it again reads on

receiving a target schema – see col. 15, lines 1-29),the source data being different from the target

data (Note: samples of schemas in Fig. 14, 17 depicts distinct forms of XML being readable

from a computer media otherwise the transformation would be of no use);

a mapping processor mapping a data schema into an ontology model (e.g. Fig. 6-9; *xml,*

workflow, map – col. 5, line 62 to col. 7, line 14); and

a transformation processor deriving a transformation for transforming data conforming to

the source data schema into data conforming to the target data schema, based on respective

source and target mappings generated by said mapping processor (Fig. 6-9; Fig. 17-18 – Note:

output response based on mapping against ontology metastore based on service and output

requests – Fig. 14, 17 -- reads on source data schema in request conforming to target schema)

for mapping said source data schema and said target data schema into a common ontology

model;

wherein the transformation transforms data conforming to source schema directly to data

conforming target schema (Note: see col. 5, line 46 to col. 7, line 14 -- to include external

intelligence and supporting structures enabling the transforming into a target schema <u>reads on</u>

data schema from the request --i.e. source schema -- directly converted into output schema

without any intermediate data schema format; Fig. 10, step 516, 518; Fig 6 and related text).

As per claims 35-41, these claims correspond to claims 2-8 respectively; hence are

rejected with the corresponding rejections as set forth therein respectively.

As per claim 70, Wachtel discloses a method for building an ontology model into which

data schema can be embedded, comprising:

receiving at least one data schema (e.g. Fig. 14, 17) defining data on a computer readable

media; and

building an ontology model at least partially based on components of the received

schema into which the at least one data schema can be embedded (Fig. 6-9; *xml, workflow, map* –

col. 5, line 62 to col. 7, line 14; *runtime ...populated* - col. 7, lines 23-65; Fig. 4), the building

being partially automatic (e.g. col. 5, line 46 to col. 7, line 14).

As per claim 71, refer to claim 2.

As per claim 135, Wachtel discloses an article of manufacture including one or more

computer-readable media that embody a program of instructions for transforming data from one

schema to another, wherein the program of instructions, when executed by a processing system,

causes the processing system to:

receive (source data schema and a target data schema...);

map the source data schema (into an ontology model...);

map the target data schema (into the ontology model...); and

derive a transformation (for transforming data conforming to the source data schema into data conforming to the target relational database schema, using the ontology model); wherein the derived transformation transforms ... target data schema; all these limitations having been addressed in claim 1 above.

As per claims 136, see Wachtel Fig. 1, col. 30-31: claims 39, 56, 57.

As per claim 138, Wachtel discloses an article of manufacture including one or more computer-readable media that embody a program of instructions for transforming data from one schema to another, wherein the program of instructions, when executed by a processing system, causes the processing system to:

receiving at least one data schema (e.g. Fig. 14, 17); and

building an ontology model at least partially based on components of the received schema into which the at least one data schema can be embedded (Fig. 6-9; *xml, workflow, map* – col. 5, line 62 to col. 7, line 14; *runtime ...populated* - col. 7, lines 23-65; Fig. 4; e.g. col. 5, line 46 to col. 7, line 14).

As per claims 139, see Wachtel Fig. 1, col. 30-31: claims 39, 56, 57.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.　　　Claims 9-19, 21-23, 25, 42-69, and 72-134 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wachtel, USPN: 6,847,947, further in view of Lindberg et al., USPN:

6,732,109 (hereinafter Lindberg)

　　　As per claims 9-10, Wachtel does not explicitly disclose that (re claim 9) wherein the

source data schema is a source table schema describing source data tables, wherein the target

data schema is a target table schema describing target data tables, and wherein the source table

schema and the target table schema each describes at least one table having columns; and that (

re claim 10) wherein the source table schema is a source relational database schema describing

source relational database tables, wherein the target table schema is a target relational database

schema describing target relational database tables. However, Wachtel discloses, from figures 3,

8, 13, that the automatic transformation is an SQL query in that Wachtel discloses a query

system involving a database search (Fig. 3, 8, 13; *DBMS* – col. 9, lines 23-27) and a service to

fulfill search in database based on XML specifications and then update database thereafter

(*updates database tables* - col. 14, line 50 to col. 15, line 67) and database used in conjunction

with modeling framework can be typified by Lindberg in which XML specifications can be

mapped into properties relationships (col. 8, line 33 to col. 14, line 10). It would have been

obvious for one skill in the art at the time the invention was made to implement the XML schema

as parsed by Wachtel in the assimilation workflow instance so that both the target and source

schemas correspond respectively to the database tables as shown by Lindberg, having relational

DB constructs because schema is a fundamental means by which a relational database is

designed/implemented and XML schema used to update records of data as suggested by Wachtel

would be of better use if such XML schema is such as it corresponds the database tables upon

which Wachtel's method is to fulfill client queries -- to fetch DB data and for updating-- it as

purported above by the RDBM of Lindberg and the update approach by Wachtel.

As per claim 11, Wachtel discloses creating class and properties (*class* -- col. 11, lines

45 to col. 12, line 19) and identifying at least one class in the ontology model corresponding to at

least one table; and identifying at least one property or composition of properties in the ontology

model corresponding to at least one table column. The mapping of metadata/specification data

with the database tables has been rendered obvious from claims 9-10 above.

As per claim 12, Wachtel based on the rationale of the rejection in claim 9-10; and the

teaching from automatic deriving of classes and properties in claim 11, discloses deriving

comprises: labeling properties of the ontology model with symbols; converting at least one

column in the source relational database schema into at least one source symbol; converting at

least one column in the target relational database schema into at least one target symbol; and

expressing the at least one target symbol in terms of at least one source symbol.

As per claim 13, Wachtel discloses composition of properties (e.g. Fig. 4, 5, 7, 17).

As per claim 14, as for the automatic deriving, Wachtel does not explicitly discloses

wherein at least one dependency exists among properties in the ontology model, and wherein

said deriving further comprises translating the at least one dependency among properties in the

ontology model as at least one dependency between target relational database columns and

source relational database columns, and wherein said expressing incorporates the at least one

dependency between target relational database columns and source relational database columns.

But in view well-known practices at the time the invention was made where relational databases

are used with the construction in information model such as typified by Lindberg in which XML

specifications can be mapped into properties relationships (col. 8, line 33 to col. 14, line 10), the

concept of translating input schema to output schema based on such database-based dependency

of data would have been inferred from the teachings by Wachtel as addressed in claims 9-10

using XML schema. Hence based on the teachings by Lindberg, it would have been obvious for

one of ordinary skill in the art at the time the invention was made to implement the XML schema

mapping of Wachtel so that it is added with the relational data dependency as by Lindberg so

that output schema derived from input schema is founded on the dependency of properties as set

forth in the relational database tables because this would facilitate the developing of results and

fulfill the requirements owing to the hierarchy of properties or layering of requirements thus

enabling time efficient mapping and model developing as purported by Lindberg (see

Background of invention) which lead to efficient gathering of required data to produced the

desired output result for the DB query by Wachtel.

As per claims 15-16, Wachtel does not expressly disclose wherein said expressing uses

expressions involving arithmetic operations and that said expressing uses expressions involving

character string operations. But the query operations to implement a search as by Lindberg or

intended by Wachtel would have inherently encompassed operations using character string or

arithmetic/logical operator to query a specific data record.

As per claim 17, Wachtel discloses applying the query to at least one source relational

database table to populate at least one target relational database table (e.g. Fig. 3, 8, 13).

As per claims 18-19, Wachtel discloses single (Fig. 1) or multiple databases (Fig. 8).

As per claim 21, Wachtel does not explicitly discloses that the source document schema

is a source DTD describing source XML documents, wherein the target document schema is a

target DTD describing target XML documents, and wherein the source DTD and the target DTD

each describes at least one XML element or XML attribute. Official notice is taken that at the

time the invention was made a XML document and its attributes being accompanied with

definition file such as a DTD document was a well-known concept. Hence in case Wachtel's

XML schema definition does not already include such DTD schema, it would have been obvious

for one skill in the art at the time the invention was made to provide such DTD schema along

with the XML documents so that both source XML and target XML are defined according to the

well known concept because without definition the attributes and properties of the XML would

not be proper to be parsed by the XML parsing technologies as implemented by W3c standards.

As per claims 22 and 23, Wachtel discloses the transformation is using J2EE

query/messaging service (e.g. col. 9, lines 8-26) with support of XML but does not expressly

mention Xquery but this limitation would have been obvious because based on the J2EE and

BEA framework, query against RDMS using Java would have been more beneficial if

implemented with Xquery using the technology based on XML structures and its metastore as

disclosed by Watchtel (Fig. 1) and Wachtel discloses XSLT script (col. 7, lines 10-14)

As per claim 25, the Xquery limitation would have been obvious by virtue of the

rationale set forth in claim 22.

As per claims 42-44, these claims correspond to claims 9-11 respectively; hence are

rejected with the corresponding rejections as set forth therein respectively.

As per claim 45, Wachtel discloses presents a user interface to enable workflow

assembling and application of integration rules using repository data (Fig. 1; *DBMS* – col. 9,

lines 23-27) but does not explicitly disclose wherein said property identifier presents a user with

a choice of at least one property in the common ontology model that may correspond to a given

table column even though a database entails representing persisted objects by table. The

presentation of properties using a model to map such property for a query against a column in a

database has been addressed above using Lindberg (e.g. col. 7, line 47 to col 14, line 17). In

view of the rationale as set forth in claim 9-10 and the user interaction as presented in a ontology

model as endeavored by Wachtel, this limitation would have been obvious for the same reasons

as set forth in claims 9-10, because of the purpose of ontology-based modeling is to allow user to

customize requirements of a application based on some schema mappings and these are both

disclosed in Wachtel and Lindberg.

As per claims 46 and 47, in view of rationale in claim 42 and the class and properties

being identified as to correspond to given column or a target table (Note: a key for a table is

inherent in DB construct for facilitating query and normalization of data), as addressed in claim

11, these claims are rejected with the rationale as set forth therein.

As per claim 48, Wachtel discloses labeling properties with symbols (see Fig.6; object

112 – Fig. 3); and combined with the teaching by Lindberg as set forth in the rationale

addressing claims 42-43, has rendered obvious converting at least one column in the source

relational database schema into at least one source symbol, and converting at least one column in

the target relational database schema into at least one target symbol; and expressing the at least

one target symbol in terms of at least one source symbol (Note: the transformation as addressed

in claim 34 combined with Lindberg would make it obvious the converting column/symbol

limitation).

As per claims 49-52, and 54-55, these claims correspond to claims 13-16, 18-19 respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claim 53, Lindberg discloses mapping applications to specific constructs of relational DB table (col. 7, line 47 to col 14, line 17) and Wachtel discloses mapping with eventual update of database (col. 14, line 50 to col. 15, line 67). It would have been obvious for one skill in the art to implement the mapping and transformation of Wachtel using database update such that applying the query processing by Lindberg so to retrieve one source relational database table; and applying the query to the at least one source relational database table to populate at least one target relational database table according to the suggested update technique by Wachtel because without update data on record would not be appropriate for subsequent queries and might generate data errors.

As per claims 56-69, these claims correspond to claims 20-33 respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claims 72-73, these claims integrate the limitations of claims 9-10: one data schema is at least one table schema describing data tables having columns, one table schema is at least one relational database schema describing relational database tables. Hence these claims are rejected using the rejections as set forth therein correspondingly.

As per claim 74, Wachtel (in view of Lindberg) discloses providing an initial ontology model; identifying and adding classes (*class* – col. 11, lines 45 to col. 12, line 19) to the initial ontology model corresponding to tables described in the at least one relational database schema; and adding properties (Fig. 6-7) to the initial ontology model corresponding to columns

described in the at least one relational database schema (Note: assimilating data and properties

from a schema to a ontology instance reads on adding class and properties in light of the

structures of the database columns and their mapping with the schema elements).

As per claims 75-77, refer to rationale of claims 6-7.

As per claims 78, 80, and 82, Wachtel (combined with Lindberg) discloses a computer

performing the adding of classes in conjunction with a user (col. 11, lines 45 to col. 12, line 19;

Fig. 1-3, 10 – Note: the adding of properties to a model being run by code, hence performed by a

program automatically).

As per claims 79 and 81, Wachtel discloses a user interface to enable assembling of

properties into the model according to some mapping and Lindberg discloses performing such

mapping by invoking DB table and column to fulfill the query. Based on the use of oncology

framework and user entry thus recognized in conjunction with the update of DB as mentioned in

claim 53, the creating of new table or class in a database would have been desirable. Hence it

would have been obvious for one skill in the art at the time the invention was made to implement

the ontology assembling and user-driven adding of classes by Wachtel so that prompting for

adding classes to the ontology model when there is a table does not correspond to an existing

class in the ontology model; and when a table does not correspond to an existing class in the

ontology model because of the desirable intent to create data as needed as viewed as desirable

from above.

As per claim 83, the limitation as to prompt to add a property to the ontology model

when there is a table column described in the at least one relational database schema that does

not correspond to an existing property or composition of properties in the ontology model, would

have been obvious for the same rationale as set forth above in claims 79 and 81.

As per claim 84, refer to claim 80.

As per claim 85, the limitation as to add a property to the ontology model when there is a

table that does not correspond to an existing property in the composition of the model, would

have been obvious for the same rationale as set forth above in claims 79 and 81.

As per claim 86, Wachtel discloses wherein said building an ontology model comprises

inferring inheritance relationships between classes in the ontology model (Fig. object 112, Fig. 3;

Fig. 4-5,6-7) but in view of the combination with Lindberg also discloses class relationships

based on relationships between tables described in the at least one relational database schema.

As per claim 87, inherence from first class to second class by way of a key in database

would have been disclosed in Lindberg by very nature of RDBM.

As per claim 88, Wachtel does not disclose wherein said inferring of inheritance

relationships includes prompting a user to confirm an inferred inheritance relationship. Official

notice is taken that interactive tool enabling user to confirm on the UI design of elements was a

known concept in the art. In view of the ontology aspect of Wachtel, i.e. a model based notably

an interactive assembling of components driven by user, this limitation would have been obvious

because of a confirmation by the user would enable the model to be founded on well-controlled

inheritance construct thereby avert compiling exceptions when output code is translated.

As per claims 89-90, refer to rejection of claims 20, 24 respectively.

As per claim 91, this claim incorporates the limitations of claims 74-75, 90; hence is

rejected with the rationale or obviousness as set forth in those claims.

As per claims 92-94, refer to rejection of claims 75-76, 78.

As per claim 95, this claim integrates the limitations as addressed in rejection of claims 79, 81, 90-91; hence is rejected or obvious in conjunction with the rejection as set forth in those claims in combination.

As per claim 96 and 98, refer to claims 80 and 78, respectively.

As per claims 97, 99, and 101, the limitations as to automatically add a class when there is an XML *complexType* that does not correspond to an existing class in the ontology model (re claim 97); to add a property when there is an XML element or an XML attribute that does not correspond to an existing property or composition in the ontology model (re claim 99); and to automatically add a property when there is an XML element or an XML attribute that does not correspond to an existing property or composition of properties in the ontology model (re claim 101) are corresponding obvious variations of claims 79, 83, 85, in light of claims 91 and 95; hence the claims are rejected with the combined rationale of those claims.

As per claim 100, refer to claim 84.

As per claims 102-119, these claims correspond to claims 70-87, respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claims 120-121, prompting for confirmation and computer tool ensuring that inheritance obeys falls under the rules and internal processes established by the relational database relationships underlying the interactive setting of a modeling tool as set forth in claim 88; hence these claims would have been obvious in light of the rationale as set forth in claim 88.

As per claims 122-134, these claims correspond to claims 84-101, respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

Response to Arguments

10.   Applicant's arguments filed 1/25/06 have been fully considered but they are not

persuasive. Following are the Examiner's observations in regard thereto.

Rejection under 35 USC §101:

(A)   The new ground of rejection has put forth the reasons why claim 102 is determined as

leading to a non-statutory matter. For a system claim, in order for the claimed elements to

convey a reasonable teaching that a tangible result is yielded, functionality has to be perceived

with explicit recital that some hardware is supporting that functionality in order to carry out such

functionality, which would lead to tangible useful real-world result. A system claim without any

tangible hardware support in order to materialize what is construed as functional descriptive

elements will be non-statutory because absent any such hardware support, there would no

reasonable perception that a tangible result will be yielded. The rejection has mentioned about

lack of teaching in the disclosure as well as the insufficient claimed teaching about hardware

support interacting with the claimed elements for the claim to fulfill a Practical Application test

requirement.

Rejection under 35 USC §102:

(B)   As per claim 1, Applicants have submitted that Wachtel teaches a LSO to generate

knowledge instance into the ontology and does not teach transforming between two different

data schemas (Appl Rmrks, pg. 26, 2nd para). The claim does not provide teaching how the

source schema and the target schema are set apart within the time frame of the transformation

process; and maintaining that they are distinct would not convince as to how they distinguish

from each other in light of the transformation itself. That is, alleging that they are different from

Wachtel's source XML request and output XML forms would require more than just alleging

from the claim that they are distinct from each other. Wachtel's process is based on abstract

concepts extracted from an intelligence database to impart them into a instance of model based

on the XML request specifications; and by using the GUI tool along with forming the LSO,

derive sufficient properties from the model abstract in light of the requirement from the input

XML then generate XSL code forming the final XML output. It is hence evident that what

comes in as a XML-based request become another XML-based output after the mapping has

been completed: the difference between what is called input/source schema and output/target

schema would be self-explanatory because transformation by Wachtel would not go through

such sophisticated sequences of actions or *workflow* (see Fig. 3-17) to yield identical XML

documents.

(C)   As per claim 34, Applicants have submitted that Wachtel uses an instance of the ontology

via populating a LSO, thus fails to disclose transformation of data directly from source data

schema format to target data schema format (Appl Rmrks, pg. 26, bottom, pg. 27, top). Reading

the claim in light of the specifications, that is the limitation recited as '…automatically derived

transformation transforms data … directly to data conforming to the target data schema', it is

construed that first, a derivation has to take place and then next, use the result from such

derivation to make a transformation directly from a source schema into a target schema. To

support this, the invention Specification proffers a mapping process using GUI panes and panels

as indicated in Figures 9A-C, using data retrieved from a RDBs repository in conjunction with a

software engine called 'Coherence' Software Application and its rules to generate the underlying

XSL constructs leading to the final XML output, or target schema (see Specifications pg. 17-

22). That is basically what Wachtel discloses. Using a GUI to consolidate a workflow by retrieving database stored templates (LSOs) or prestored knowledge, a developer's enlistment interface (e.g. col. 6, lines 26-63) is created to put forth one instance of the ontology model; and use the mapping rules therein in light of the request specification according to which data are being retrieved, generate XSL constructs automatically to yield the final XML output. Wachtel teach deriving a knowledge gathering set of data via an intelligence assimilation/mapping software to yield a model and using this derived transformation to transform schema into schema construct (see Fig. 10, step 516, 518; Fig 6 and related text). The language of the claim even read in light of the specification have not been perceived as distinguishing from Wachtel's approach, which is to receive a XML request, gather the intelligence using a user interfacing tool and some RDBMs data retrieval to instantiate a model, and based on the derived transformation thus gathered, generate a XML response based on the required specifications as set out in the request, with no schema intermediate format being needed between the request message and the returning message. That is, the limitation recited as '...automatically derived transformation transforms data ... directly to data conforming to the target data schema' has been fulfilled. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

(D)   As per claim 70, Applicants have submitted that Wachtel ontology is a 'one size fits all'; and this is not a model that is rather at least partially built responsive to the received one schema (Appl. Rmrks, pg. 27, middle). The constructs being stored in Wachtel data store serve as metastore, thus is not purported for specifically fit into any instance; but upon receiving a client

XML message request, the assimilation system will activate a workflow by retrieving

appropriate descriptors in such metastore and thus applying the mapping rules against the

requirement of the schema source, instantiate a ontology model by means of one or more LSOs (

see Fig. 3-6). The argument about Wachtel's ontology as being 'one fits all' would be non

persuasive because instance of models thus created by Wachtel are responsive to the XML client

request regardless of whether the metastore is being persisted in the DB to address many such

instances; and this concept of using a metadata to be reused in development or project building

instances was a known concept at the time Wachtel's invention was made. Wachtel's disclosing

of a developer environment to configure descriptor enlisting for a workflow along with

generating of XML constructs for a message return has fulfilled the claim.

(E)   As per claim 135, Applicants have submitted that there is 'no derived transformation

which transforms … to the target schema' and that there are two different data schemas (Appl.

Rmrks pg. 28, top 3 para). This argument falls under the subject being discussed in sections B

and C above; and are to be referred thereto for a response.

(F)   As per claim 138, Applicants' argument will have to be referred to section D above.

Rejection under 35 USC §103:

(G)   Applicants have submitted that neither Lindberg nor Wachtel teach 'receiving a source

data and a target data schema, …to the target data schema' and that if an independent claim is

non-obvious then any dependent claim depending thereon is non-obvious (Appl Rmrks, pg. 29-

30). The arguments concerning claim 70 limitations not being met by the references are based

on the amendments to the claim newly submitted. The rejection has addressed each an single

one of the limitation therein using a USC 102 anticipation type of rejection, with the related

issues being addressed earlier in section D above. If claim 1 is rejected for being anticipated by

a 102 type, it encompasses not only anticipated subject matter but also obvious subject matter

being variations of the former; and the dependent claims for carrying obvious variations

therefrom can be rejected as obvious. The argument about Lindberg not building an ontology

model would become inappropriate because the rationale of rejection under this 103(a) ground

includes combined teachings; and attacking one reference would not be sufficiently effective in

rebutting why a feature would be non-obvious. The rejection has pointed out what appears to be

missing in Wachtel would be obvious in light of an analogous approach such as Lindberg's in

view of some common purpose. In response to applicant's arguments against the references

individually, one cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(H)   As per claims 34 and 70 along with the dependent claims, Applicants have submitted that

neither Lindberg nor Wachtel teach 'receiving a source data and a target data schema, …to the

target data schema' of the independent claims 34 and 70 (Appl Rmrks, pg. 30-31). The response

to the arguments concerning these independent claims has been set forth in sections C and D

from above. The rejection has been based on the claim language using broad interpretation in

light of the specifications. The direct transformation without recourse to the ontology does not

seem to come from the claim language when the claim talks about a model and deriving a

transformation. A derivation has to come first and based upon which a transformation can take

place. Wachtel has fulfilled this limitation when the claim does not make it very explicit as to

how the 'directly' limitation has been implemented to preclude what Wachtel has implemented

from reading into the claim.

(I)   The arguments concerning Lindberg and Wachtel in regard to claim 102 (Appl. Rmrks

pg. 32) and its dependent claims fall under the ambit of the subject already addressed in section

C, D above; and are deemed non persuasive in light of the rejection set forth and the Examiner's

observations from above.

The claims therefore will stand rejected as set forth in the rejection.

Conclusion

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The

examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on (571)272-3719.

The fax phone number for the organization where this application or proceeding is

assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before

using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-

272-3609.

Any inquiry of a general nature or relating to the status of this application should be

directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be

obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VAT

April 19, 2006

KAKALI CHAKI
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